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# A Grounded Theory of Enterprise Application Software Implementation

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## The Problem

The implementation process for “enterprise application software” (e.g. software from SAP, Oracle, Baan, or PeopleSoft) is notable for the cost, the amount of time, and the degree of organizational change it entails. The adaptation phase (Kwon and Zmud, 1987), during which differences between software functionality and organizational requirements are resolved through a combination of organizational process changes and software customization, is particularly challenging. The research focuses on how change is effected during this central phase of the implementation process. Formally stated, the research question is: **“What are the critical dimensions shaping organizational changes during the adaptation phase of enterprise application software implementation?”**

## Literature

While EAS implementation has not been specifically addressed in the IS literature, relevant issues have been explored in research on organizational change. The literature on business process re-engineering (BPR), for instance, suggests motivations for embarking on such an exercise, and provides descriptions of different approaches (e.g. Davenport, 1993; Hammer and Champy, 1993; Kettinger and Grover, 1995). However even if the planned changes are radical, implementation is often evolutionary rather than revolutionary (Stoddard and Jarvenpaa, 1995). The BPR literature also identifies factors that are important for successful change. Overall, however, the focus of this literature is on planned rather than emergent change. Much of it addresses the front-end design issues and the management of change during roll-out, but does not specifically consider the adaptation phase.

Mutual adaptation of technology and organization (Leonard-Barton, 1988) is an iterative process which cannot be fully planned in advance. Orlikowski (1996) observed that existing organizational properties (such as norms, job characteristics, and bases for evaluation) are reflected in the activities of organizational actors. In a cyclical pattern, these actions result in the metamorphosis of both the organizational properties and the technology, which in turn are reflected in new activities. This suggests that to understand how the implementation process for an EAS effects organizational change, close observation of the implementation team is required. However, in contrast to the almost improvised activities observe by Orlikowski, EAS implementation follows a fairly detailed script. At the same time, those prescribed actions are both constrained and facilitated by the organizational context. In this situation, the organization has to adapt, and adapt to, both the technology it has purchased and the vendor’s implementation methodology.

Pettigrew (1990) describes a similar “contextual, processual” view of change. He asserts that when change is viewed as a series of discrete episodes, research generally fails to provide data on the mechanisms and processes through which change occurs. In particular he argues the importance of considering change as embedded in a specific organizational context, simultaneously touching on different levels of analysis and reflecting organizational history. He also notes that context not only shapes change, but is in turn shaped by it.

Underlying the view of change held by these authors is Giddens’ (1984) structuration theory. The framework built on this theory by Orlikowski and Robey (1991) provides the theoretical basis for the current study. However as those authors point out, while structuration theory is a meta-theory, providing a way to view the relationship between information systems and organizations, it is essentially non-propositional. Nonetheless it is well suited as a foundation for the development of substantive theories.

## Methodology

Grounded theory methodology was specifically developed by its creators to generate substantive level theories that are embedded in context and illuminate processes (Glaser and Strauss, 1967). The intensive style of research planned permits only a limited number of implementations to be studied. To maximize exposure to a variety of circumstances, one implementation will be studied longitudinally, supplemented by case studies at a number of other sites (Leonard-Barton, 1990). The longitudinal study will include semi-structured interviews with individual team members, observation of interactions between pairs and groups, participation in project team meetings, and examination of project documentation. So that the evolution of organizational change can be followed, the researcher will spend one or two days a week at the site for the duration of the implementation project. The additional case studies will be chosen to represent projects at different stages of the implementation process.

## References

References are available from the author on request.